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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,238	01/29/2001	Mitsuo Saeki	1080, 1090/JDH	6797

21171 7590 12/19/2001

STAAS & HALSEY LLP  
700 11TH STREET, NW  
SUITE 500  
WASHINGTON, DC 20001

EXAMINER

STERRETT, JEFFREY L

ART UNIT

PAPER NUMBER

2838

DATE MAILED: 12/19/2001

Please find below and/or attached an Office communication concerning this application or proceeding.



770,238

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
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EXAMINER
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DATE MAILED:

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

### OFFICE ACTION SUMMARY

☒ Responsive to communication(s) filed on 10/22/01

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

#### Disposition of Claims

- ☒ Claim(s) 1-40 is/are pending in the application.  
Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
☐ Claim(s) \_\_\_\_\_ is/are allowed.  
☒ Claim(s) 1-40 is/are rejected.  
☐ Claim(s) \_\_\_\_\_ is/are objected to.  
☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

#### Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.  
☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.  
☒ The proposed drawing correction, filed on 10/22/01 is ☐ approved ☒ disapproved.  
☐ The specification is objected to by the Examiner.  
☐ The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).  
☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.  
☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_  
☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

- ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

- ☐ Notice of Reference Cited, PTO-892  
☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_  
☐ Interview Summary, PTO-413  
☐ Notice of Draftsperson's Patent Drawing Review, PTO-948  
☐ Notice of Informal Patent Application, PTO-152

--SEE OFFICE ACTION ON THE FOLLOWING PAGES--

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1. Figures 1, 2, and ~~5-7~~ should be designated by the legend --Prior Art-- because only what was old and known in the art at the time of the invention is illustrated (See MPEP § 608.02(g)).

Although Figures 1 and 2 may be felt to illustrate the inventive concept, they are so generic that they are more properly labeled "Prior Art". ~~Acknowledgment is made of applicant's proposal to label figures 5-7 as "Related Art" however the required label is "Prior Art".~~

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, a display unit displaying that the main synchronous rectifying switches are simultaneously turned on as recited by claims 2, 23, and 30 must be shown or the feature canceled from the claim. No new matter should be entered. Rule 37 CFR 1.83(a) can be paraphrased as "if it is important enough to recite a limitation in the claims then the limitation should be shown in the figures and if the limitation is not important enough to be shown in the figures then the limitation is correspondingly not important enough to recite in the claims".

~~3.~~ The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 15-21 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kuriyama et al (US 5,933,341).

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5. Claims 1-14 and 22-35 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kuriyama et al in combination with Weggel (US 5,646,837).

Kuriyama et al teaches a monitor circuit as recited by claims 1, 3-14, 22, 24-29, and 31-35 except for utilizing the monitor circuit in a DC-DC converter. Weggel teaches as old and known in the art at the time of the invention that DC-DC converters had the same short circuit or shoot through problems requiring some kind of monitoring. It would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the old and known monitor circuit of Kuriyama et al to monitor an old and known DC-DC converter, such as taught by Weggel, in order to detect a short circuit or shoot through problem in a manner that was old and known in the art at the time of the invention.

The DC-DC converter with monitor circuit as further recited by claims 2, 23, and 30 further sets forth a display unit displaying that the main synchronous rectifying switches are simultaneously turned on. Official notice is taken that it was an old and known expedient in the art at the time of the invention to display operational conditions, such as when switches are simultaneously turned on, of power converters that would be of concern to users of the power converters. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the DC-DC converter monitor circuit of Kuriyama et al and Weggel to include a display unit displaying that the main synchronous rectifying switches are simultaneously turned on since such was an old and known expedient in the art at the time of the invention.

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6. Claims 36-40 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kuriyama et al in combination with Weggel as applied above, and further in combination with any one of Morgan et al (US 3,376,492 or RE 27,128) or Ooba (US 6,175,511).

Kuriyama et al and Weggel collectively teach a DC-DC converter with a monitor circuit as recited by claims 36-40 except for specifying that the DC-DC converter comprises an inductor in series with a first switch. Morgan et al and Ooba both teach as old and known in the art at the time of the invention a DC-DC converter comprises an inductor in series with a first switch. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the DC-DC converter with a monitor circuit collectively taught by Kuriyama et al and Weggel by utilizing an inductor in series with a first switch of the DC-DC converter as taught by either Morgan et al or Ooba.

7. Applicant's arguments filed October 22, 2001 considered but they are not persuasive.

In response to the remarks regarding the Kuriyama et al reference, applicant is mistaken in a few major regards. First, Kuriyama et al concerns an inverter or a DC/AC converter as clearly stated throughout the Kuriyama et al reference (see lines 1-6 of the abstract for example) and NOT a synchronous rectifying circuit, or an AC/DC converter, as apparently alleged by applicant. Second, the switching topology shown in figures 1 and 4 of Kuriyama et al for a single phase of a three phase inverter is very analogous to the circuitry of applicants invention. Third, since both Kuriyama et al and applicant are concerned with detecting simultaneous conduction of series

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connected switches across a DC source, applicants broadly recited "detection circuit" reads upon the "detection circuit" of Kuriyama et al. And Fourth, the recitations within the preamble are not patentably limiting unless the body of the claim further sets them further - thus "A DC-DC converter" is recited in name only without any supporting circuitry or limitations to demarcate it from any generic converter and "a synchronous rectifying switching" is likewise recited in name only without any recited supporting circuitry or limitations to demarcate it from any generic purpose switch.

In response to the remarks regarding the combination of the teachings Kuriyama et al and the other recited references, since the remarks all reflect back upon the remarks solely regarding Kuriyama et al, the above remarks equally concern the combination of Kuriyama et al and the other recited references.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

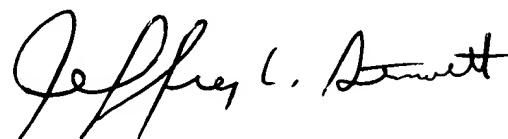
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Sterrett whose telephone number is (703) 308-1632. The examiner can normally be reached on Monday through Thursday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Wong, can be reached on (703) 305-3477. The fax phone number for this Art Unit is (703) 305-7723 and the fax phone numbers for this Group are (703) 305-3431 or (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

jls

December 18, 2001



Jeffrey L. Sterrett

Primary Examiner

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